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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,449	11/06/2003	Naoto Kijima	244936US0X CIP	7622
22850	7590	02/08/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			KOSLOW, CAROL M	
			ART UNIT	PAPER NUMBER
			1755	
DATE MAILED: 02/08/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/701,449	KIJIMA ET AL.	
	Examiner	Art Unit	
	C. Melissa Koslow	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/325,826.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/6/03</u> | 6) <input type="checkbox"/> Other: ____ |

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The references cited in the Information Disclosure Statement of 6 November 2003 are found in the parent application. The Japanese references cited have been considered with respect to the provided English abstracts.

The disclosure is objected to because of the following informalities: The status of the parent needs to be updated. Applicants have two different definitions for "primary particle", the one on page 37, line 26 through page 38, line 2 and the one on page 63, lines 15-22. Appropriate correction is required.

There is no teaching of the claimed phosphor particles in the parent application. Therefore the claims have an effective filing date of 6 November 2003.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,746,944.

This reference teaches $\text{LaPO}_4\text{:Ce,Tb}$ phosphors having an average particle size in the range of 1-15 microns. This size overlaps the claimed secondary particle size range. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Column 9, lines 20-25 teaches the phosphor particles can be substantially spherical and composed of crystallites which have an average size of 0.1-0.3 microns. The taught

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crystallites read upon the claimed primary particles and have a size that falls within the claimed range. The taught particles have aspect ratio of about 1 (the aspect ratio of a sphere), which falls within the claimed range. While the reference does not teach the internal quantum efficiency of the taught phosphors, but one of ordinary skill in the art would expect it to overlap the claimed range, due to fact taught phosphors has the claimed aspect ratio, claimed secondary particle size range and the size of the phosphors overlap, absent any showing to the contrary. The reference suggests the claimed phosphor.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,180,029.

This reference teaches spherical oxygen containing phosphors. Column 36-56 teaches these particles have a secondary particle median size in the range of 0.3-3 microns and are composed of crystallites, or primary particles, which have a size in the range of 0.1 micron up to less than the median secondary particle size. These sizes overlap the claimed ranges. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The taught particles have aspect ratio of about 1 (the aspect ratio of a sphere), which falls within the claimed range. While the reference does not teach the internal quantum efficiency of the taught phosphors, but one of ordinary skill in the art would expect it to overlap the claimed range, due to fact taught phosphors has the claimed aspect ratio and the secondary and primary particle size ranges overlap the claimed ranges, absent any showing to the contrary. Column 34, line 59 through column 35, line 19 teach the composition of the taught phosphors

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can be any known oxygen containing phosphors. The exemplified phosphors includes europium activated yttrium oxide, zinc activated zinc oxide, silicates activated by Mn, Ce or Eu. While it does not exemplify a phosphor having the formula of claim 4, such phosphors are well known, such as europium activated alkaline earth aluminates having the formula MA_2O_4 . Therefore one of ordinary skill in the art would have found it obvious to produce such phosphors having this formula by the taught process to form phosphors of this formula having the taught morphology. The reference suggests the claimed phosphors.

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

There is no suggestion or teaching in the cited art of record of a phosphor having the claimed composition and particle morphology.

U.S. patent 6,712,993 is cited as interest since it is the patent resulting from the parent application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at (571) 272-1362.

The fax number for all official communications is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
February 4, 2005



C. Melissa Koslow
Primary Examiner
Tech. Center 1700